

EXHIBIT A

Cuttitta, F. 1

Curriculum Vitae

Name: Frank Cuttitta

Date of Birth: November 7, 1947; Brooklyn, New York

Citizenship: United States

Marital Status: Married, 1973, two children

Education:

June 1965	Graduated Wheaton High School Wheaton, Maryland
June 1970	B.A. (Microbiology/Biochemistry), University of Maryland, College Park, Maryland
June 1980	Ph.D. (Microbiology/Immunology), University of Maryland, College Park, Maryland

Brief Chronology of Employment:

1970-1972	Microbiologist GS-5, Platelet Aggregation Studies, Dr. Sherly Johnson, V.A. Hospital, Washington, D.C.
1972-1975	Microbiologist GS-7, Thyroid Research, Dr. Louis Olnier, V.A. Hospital, Washington, D.C.
1975-1978	Microbiologist GS-9, Sickle Cell Research, Drs. Geraldine Schechter/Paul McCurdy, V.A. Hospital, Washington, D.C.
1978-1980	Microbiologist GS-11, Monoclonal Antibody Development, Dr. John Minna, V.A. Hospital, Washington, D.C.
1980-1982	NIH Postdoctoral Fellowship, Dr. John Minna, V.A. Hospital, Washington, D.C.
1982-1984	Staff Fellow, NIH, NCI, DCT, Navy Medical Oncology Branch, NNMC, Bethesda, Maryland

- 1984-1986 Senior Staff Fellow, NIH, NCI, DCT, Navy Medical Oncology Branch, NNMC, Bethesda, Maryland
- 1986-1989 Research Assistant Professor of Medicine
USUHS detailed to NCI-Navy Medical Oncology Branch, NNMC, Bethesda, Maryland
- 1989-1991 Research Associate Professor of Medicine
USUHS detailed to NCI-Navy Medical Oncology Branch, NNMC, Bethesda, Maryland
- 1991-1995 Deputy Branch Chief, NIH, NCI, DCS, Biomarkers and Prevention Research Branch, Rockville, Maryland.
- 1995-1996 Acting Branch Chief, NIH, NCI, DCS, Biomarkers and Prevention Research Branch, Rockville, Maryland.
- 1997-2006 Senior Investigator, NIH, NCI, CCR, Cell and Cancer Biology Branch, Chief, Cancer Cell Peptide Regulator Section Bethesda, Maryland.
- 2006-present Director, NCI Angiogenesis Core Facility
Advance Technology Center (ATC)
8717 Grovemont Circle, Room 115
Gaithersburg, MD 20877

Present Address:

7908 Hope Valley Court, Adamstown, Maryland 21710

Telephone:Mentorship Status-Postdoctoral Teaching Program:

Postdoctoral Fellows

Steve Rosen, M.D. 1980-1981
(Northwestern University)

James Mulshine, M.D. 1981-1983

(Holy Cross University)

Sylvia Fargion, M.D. (Tumor Institute of Milano - Italy)	1981-1983
Austin Doyle, M.D. (University of Maryland)	1983-1984
Philip Kasprzyk, Ph.D. (Pennsylvania State University)	1985-1989
Kathryn A. Quinn, Ph.D. (University of Queensland - Australia)	1991-1994
Theodore Elsasser, Ph.D. (USDA - sabbatical)	1995-1997
Luis Montuenga, Ph.D. (University of Navarra - Spain)	1995-1998
Alfredo Martínez, Ph.D. (University of Navarra - Spain)	1994-2004
Mercedes Garayoa, Ph.D. (University of Navarra - Spain)	1997-1999
Rubén Pío, Ph.D. (University of Navarra - Spain)	1998-2000
Enrique Zudaire, Ph.D. (University of Navarra – Spain)	2000-present
Elizabeth Warner, M.D. (Department of Surgery, Georgetown University)	2002-2004
Sergio Portal, Ph.D. (University of Navarra – Spain)	2003-present
Changge Fang, Ph.D. (Transfer from NEI)	2007-present

Mentorship Status - Summer Student Training Program:

Blair High School Magnet Program
Chethan Gangireddy 1995 (summer)

Georgetown Prep High School Brian Henderson	1996 (summer)
Stone Ridge Country Day School Christine Piringer	1996 (summer)
Georgetown Prep High School Brian Henderson	1997 (summer)
Georgetown Prep High School Brian Henderson	1998(summer)
Georgetown Prep High School Brian Henderson	1999 (summer)
New York Harbor Health Care Center Brooklyn, NY Department of Surgery Dr. Bridget Chin	2000 (summer)
New York Harbor Health Care Center Brooklyn, NY Department of Surgery Dr. Susan Burekhovich	2002 (summer)
New York Harbor Health Care Center Brooklyn, NY Department of Surgery Ms. Sheba Mathew	2003 (summer)
Alexandria High School Ms. Christie Falco	2005, 2006 (summer)
Salisbury University (Eastern Shore Facility) David Kimmel	2007 (summer)

Bibliographic References

Peer Reviewed Articles

1. Daily, P.O., Cuttitta, F., and MacQuillan, A.M.: The absence of DNA photoreactivation enzyme in yeast mitochondria. **Biochim. Biophys. Acta** **454**:375-377, 1976.

2. Cuttitta, F., Rosen, S., Gazdar, A.F., and Minna, J.D.: Monoclonal antibodies that demonstrate specificity for several types of human lung cancer. **Proc. Natl. Acad. Sci. USA** **78**:4591-4595, 1981.
3. Minna, J.D., Cuttitta, F., Rosen, S., Bunn, P.A., Carney, D.N., Gazdar, A.F., and Krosnow, S.: Methods for production of monoclonal antibodies with specificity for human lung cancer cells. **In Vitro** **17**:1058-1070, 1981.
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11. Cuttitta, F., Carney, D.N., Mulshine, J., Moody, T.W., Fedorko, J., Fischler, A., and Minna, J.D.: Bombesin-like peptides can function as autocrine growth factors in human small cell lung cancer. **Nature (London)** **316**:823-826, 1985.

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Book Chapters

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Patents Held Through U.S. Government Participation:

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 Neutralizing antibody to the tumor growth factor gastrin releasing peptide,
 Application supported by the documentation
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 First Revision of Patent - June 20, 1989

Second Revision of Patent - September 10, 1990
 Final Patent Awarded - February 13, 1991

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Monoclonal antibody 2A11 as detection assay for SCLC
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 Second Revision of Patent - February 10, 1994

Monoclonal antibody 2A11 as therapeutic approach to SCLC
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Filing Date – September 8, 2000.

Determination of adrenomedullin-binding proteins.

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Pío R *et al.* **J. Biol. Chem.** **276**:12292-12300, 2001.

Complement factor H identified as a serum binding protein for adrenomedullin (AM) and when complexed with AM enhances the ligand's biological activity.

US Provisional Patent No. 10/070/853

Filing Date – August 26, 2002

Vassopressor peptide derived from adrenomedullin and methods of its use.

Demonstrates matrix metalloprotease-2 (MMP-2) rapidly degrades AM and destroys the ligand's hypotensive property. MMP-2 enzymatic cleavage of AM is completely blocked when the peptide ligand is complexed with complement factor H. Also, a fragmentary peptide from the AM/MMP-2 degradative process, denoted as AM11-22, functions as a hypertensive peptide.

U.S. Provisional Patent Application No. 60/416,291

Filing Date – October 4, 2002.

A new target for angiogenesis and anti-angiogenesis therapy.

Identification of proadrenomedullin N-terminal peptide (PAMP) as a potent tumor-derived angiogenic factor and a peptide antagonist to PAMP which blocks angiogenesis and suppresses xenograft growth.

U.S. Provisional Patent Application No. 60/425,018

Filing Date – November 7, 2002.

Non peptide agonist and antagonist of adrenomedullin and gastrin-releasing peptide.

Development of a new robust methodology for identifying small molecule regulators of peptide hormone function base on the disruption of neutralizing monoclonal antibodies binding to appropriate ligands.

Establishing gastrin-releasing peptide (GRP) as a potent tumor-derived angiogenic factor and identifying a small molecule antagonist that blocks GRP angiogenic activity and suppresses xenograft formation in nude mouse studies.

U.S. Provisional Patent Application No. 60/500,650

Filing Date – September 8, 2003

Stably transfected multicolored fluorescent cells.

Generation of human tumor cell lines and endothelial cell lines with different colored fluorescent proteins (GFP, YFP, RFP, & CFP) for use in co-culture angiogenesis assays.

U.S. Provisional Patent Application No.60/976,732

Filing Date – October 1, 2007

Apelin peptides and methods of use.

Identification of a unique amidated peptide process from the N-terminus of apelin-36 that has potent angiogenic activity.

U.S. Provisional Patent Application No. 61/156.351

Filing Date - February 27, 2009

Antiangiogenic small molecules, and methods of use.

Screening of the DTP small molecule diversity set of small molecules has identified several compounds that disrupt endothelial cells growth or tube formation and suppress xenograft human tumor cell growth.

U.S. Provisional Patent Application No. 61/230,667

Filing Date – July 31, 2009

Methods of monitoring angiogenesis and metastasis in three dimensional co-cultures.

Use of human tumor cell xenograft biopsy implants in 3D co-cultures with endothelial cells to determine antiangiogenic drug sensitivity profile – prototype assay as “Proof-of-Principle” for clinical application segue.

U.S. Provisional Patent Application No. 12/802,666

Filing Date – June 10, 2010

Confidential Disclosure Agreements (CDA)/Material Transfer Agreements (MTA)/Cooperative Research and Development Agreements (CRADA) with US Biomedical/Pharmaceutical Companies:

Evogenix CRADA (\$300,000) – Initiated November 1, 2006. Pre-clinical evaluation of a humanized neutralizing anti-proadrenomedullin N-terminal 20 peptide (PAMP) monoclonal antibody as an antiangiogenic drug.

Sisene CRADA (\$200,000) – Initiated July 10, 2010. Pre-clinical evaluation of recombinant C-terminal Nephroblastoma Over Expressed Protein (NOV)/Cysteine Rich Protein 61, Connective Tissue Growth Factor, Nephroblastoma Over Expressed Protein (CCN3) as an antiangiogenic drug. In addition, determine the mechanism of action underlying the antiangiogenic effect.

Millipore Corporation CDA to discuss neutralizing compounds that block adrenomedullin biological activity and parallel discussion on related peptide amide growth factors. Initiated July 1, 2010.

Salk Institute MTA for neutralizing anti-bombesin/gastrin releasing peptide monoclonal antibody. Initiated July 19, 2010.